UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte ROBERT TELAKOWSKI

Appeal No. 2005-1543
Application No. 09/907,462

ON BRIEF

Before WARREN, TIMM, and FRANKLIN, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal involves claims 8, 9, and 12 which are all the claims pending in the application. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 134.

INTRODUCTION

The Examiner rejects the claims under 35 U.S.C. § 103(a). As evidence of unpatentability, the Examiner relies upon the following prior art references:

Quenneville	US 5,419,420	May 30, 1995
Dodd et al. (Dodd)	WO 98/01,597	Jan. 15, 1998

Specifically, the Examiner rejects claims 8, 9, and 12 under 35 U.S.C. § 103(a) as unpatentable over Quenneville in view of Dodd.

Appellant states that the claims stand or fall together (Brief, p. 5). We select claim 8 to decide the issues on appeal. Claim 8 is directed to a starter including a shaft constructed from a nitrided high speed steel, such as M50 alloy steel. Claim 8 reads as follows:

> 8. A starter comprising:
>
> a housing,
>
> a planetary gear assembly supported within said housing;
>
> a shaft arranged within said planetary gear assembly wherein a portion of said shaft is constructed from a nitrided high speed steel.

We affirm and in so doing we adopt the findings of fact and conclusions of law articulated in the Answer. We add the following for emphasis.

OPINION

There is no dispute that Quenneville describes a starter having a housing (gear housing 12), a planetary gear assembly (30) within that housing, and a shaft (stationary shaft 33) within the planetary gear assembly as required by claim 8 and as found by the Examiner (Answer, pp. 3-4). There is also no dispute that Dodd describes subjecting bearing components made from high speed steel, such as M50 alloy steel, to a nitriding process in order to improve wear resistance, resistance to debris damage, and rolling contact fatigue resistance as further found by the Examiner (Answer, pp. 4-5). The Examiner further finds that "one of ordinary skill in the art would have been motivated to utilize the materials of Dodd in the structure of Quenneville in order to provide the gas turbine engine bearing components (including the shaft) of Quenneville with the desirable properties taught in Dodd." (Answer, p. 5). The Examiner has found all of the claimed elements within the prior art and advanced a finding of a suggestion to combine those elements based on objective evidence within the prior art teachings. Therefore, the Examiner has established a prima facie case of obviousness in accordance with 35 U.S.C. § 103(a). *See In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988) (there must be "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references").

Appellant calls into question the Examiner's finding of a suggestion to make the combination. Specifically, Appellant argues that "nothing in the references suggests the need for a nitrided M50 for the planetary gear shaft" of Quenneville. (Brief, p. 5). In support of this argument Appellant asserts that there are differences between the teachings of the two references which translate to a lack of motivation to make the combination (Brief, p. 6). Specifically, according to Appellant, Dodd teaches use of the bearing assembly in aircraft engines whereas Quenneville is directed to a bearing assembly in an aircraft engine starter (Brief, p. 6). Appellant also asserts that Dodd addresses conventional bearing arrangements and does not disclose or suggest using a shaft as part of a bearing assembly (Brief, p. 6). Appellant also argues that the art does not teach or suggest the use of the nitrided material in the location claimed and, therefore, the cited references cannot render the Appellant's invention obvious. (Brief, pp. 6-7).

Appellant's arguments overlook the key similarity between the two teachings: both references are directed to rolling-element bearing components. Quenneville describes a specific rolling-element bearing assembly including "a central support shaft 34 rotatably supported via bearing means 36, for example roller bearings, on a stationary shaft 33." (Quenneville, col. 6, ll. 24-27). Quenneville is silent as to the material of manufacture, therefore, one of ordinary skill in the art would have looked to disclosures of conventionally used materials. Dodd is directed to a high hardness

material useful in rolling-element bearing components. Dodd places no particular limitations on the components that can be made using the material of Dodd and components such as inner and outer bearing rings are specifically mentioned (Dodd, claim 6). An inner ring of a bearing component is analogous in function to the shaft of Quenneville as both support bearing elements such as roller bearings. That Quenneville describes a bearing assembly, is silent with respect to the material of manufacture, and Dodd describes a material not only suitable for bearing assemblies but which has improved properties is strong evidence in support of a finding of a suggestion to combine. Nor can we agree that there is a difference in intended use environment that would dissuade one of ordinary skill in the art from using the nitrided material in the bearing assembly of Quenneville. Dodd simply discloses that "[r]olling element bearing components for use in aircraft engines in particular are made from M50, M50 NiL and Pyrowear 675 steels." (Dodd. p. 1, ll. 16-17). That disclosure does not somehow teach away from the use of M50 steel in aircraft engine starters, it merely states one well known use. Nor does Dodd teach away from use in bearing assemblies of the Quenneville construction. Dodd is directed to rolling-element bearing components in general without restriction.

Appellant further argues that "[o]ne of ordinary skill in the art would not take the shaft of Quenneville and nitride the shaft or use an M50 alloy because nitriding and using M50 alloys is very expensive and time-consuming." (Reply Brief, p. 1). This

argument is not convincing for several reasons. First, the prior art indicates that there would have been a reasonable expectation of success in using the high hardness material in bearing components. In fact, improved properties such as improved wear resistance, resistance to debris damage, and rolling contact fatigue resistance would have been expected (Dodd, p. 3, ll. 7-10). Cost might be a consideration for commercialization, but cost does not provide evidence of non-obviousness in the present context in view of the evidence of a reasonable expectation of success.

Appellant's cost argument also seems to assume that Quenneville identifies a material for the bearing components taught therein. But that is not the case. Quenneville is silent with respect to the material of the shaft or, for that matter, the material of any of the other bearing members. One of ordinary skill in the art would have looked to other prior art for teachings of suitable materials. Dodd teaches such a suitable material.

We conclude that the Examiner has established a prima facie case of obviousness with respect to the subject matter of claims 8, 9, and 12 which has not been sufficiently rebutted by Appellant.

CONCLUSION

To summarize, the decision of the Examiner to reject claims 8, 9, and 12 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

CHARLES F. WARREN Administrative Patent Judge	)	
CATHERINE TIMM Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
BEVERLY A. FRANKLIN Administrative Patent Judge	)	

CT/sld

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